Unit 14
Day 1
Quadratic Functions

Quadratic Function:

$$y = ax^2 + bx + c \text{ or } f(x) = ax^2 + bx + c$$

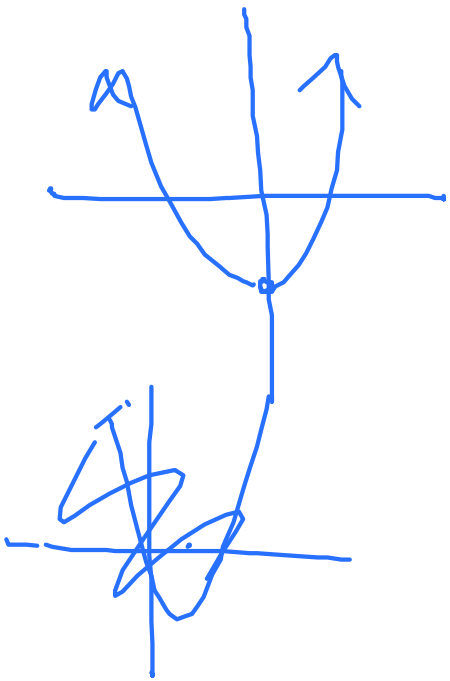
where a,b, and c must be real numbers and $a \neq 0$

Examples:

$y = 3x^2 - x + 4$	Quadratic Trinomial
$y = 6x^2 + 2$	Quadratic Binomial
$f(x) = \frac{1}{3}x^2$	Quadratic Monomial
$h(x) = (2x - 1)^2$	Quadratic Trinomial

Ex1: $f(x) = 2x^2 - 3$

x	-3	-2	-1	0	1	2	3
f(x)	15	5	-1	-3	-1	5	15



Ex2: $y = x^2 - 3x + 2$

x	-3	-2	-1	0	1	2	3
y	20	12	6	2	0	0	2

Ex3: $y = 3x^2 + bx - 2$ contains the pt. (2,-4)

$-4 = 3(2)^2 + b(2) - 2$

$-4 = 12 + 2b - 2$

$-14 = 2b$

$-7 = b$

$y = 3x^2 - 7x - 2$

Ex4: $y = ax^2 + 3$ contains the pt. (-2,1)

$1 = a(-2)^2 + 3$

$1 = 4a + 3$

$-2 = 4a$

$-\frac{1}{2} = a$

x y

$y = -\frac{1}{2}x^2 + 3$

HW Wksht #1 1-16 all